

Date: Wed, 16 Feb 94 04:30:32 PST  
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>  
Errors-To: Ham-Homebrew-Errors@UCSD.Edu  
Reply-To: Ham-Homebrew@UCSD.Edu  
Precedence: Bulk  
Subject: Ham-Homebrew Digest V94 #31  
To: Ham-Homebrew

Ham-Homebrew Digest                      Wed, 16 Feb 94                      Volume 94 : Issue    31

Today's Topics:

    A few more (different) questions! (2 msgs)  
        Antenna help..  
    Good substitute for 1N23 as noise source? (2 msgs)  
        Help: I need a Z8 compiler!  
        Pkt satellite receiver card for PC?  
    Question about Super Dual-Band J-Pole  
        Usenet MC  
        What test equipment do you use?

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>  
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

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Date: 13 Feb 1994 19:56:37 GMT  
From: agate!howland.reston.ans.net!cs.utexas.edu!bga.com!vern.bga.com!  
kbrune@ames.arpa  
Subject: A few more (different) questions!  
To: ham-homebrew@ucsd.edu

fsrla@aurora.alaska.edu wrote:  
: Yep, another post.....but this one is of  
: a different nature, though it is MORE  
: questions.....sigh.....

Hey how is it going up there in Ak. I grad from UAF in 92  
What dept. are you in?

: 1. What exactly is a varactor diode??? What

: does it do? Where do I go about purchasing them?  
: I can't find any in the catalogs I have.

varactor diode- variable reactance, this type of diode when reversed biased changes capacitance when a voltage is applied. These diodes are use for many thing, one application is a voltage controlled oscillator another is frequency modulation. Pretty handy parts..check out the ARRL handbook. professor Merrit up there at the EE dept has a few copies. Motorola has many types of diodes you can probably get a sample from them, Newark or digikey should sell them but I think they both have \$25 limits on there orders.

: 2. Are enameled wire and insulated wire the same thing?  
enameled wire has enamel on it usually a clear coating of enamel that you can scratch off with a knife. I have used this for winding RF chokes etc..

: 3. In relation to number 2 up there....when wireing your  
: own toriods, is wire size, and insulation incredibly important?  
: It seems like they would be, but a friend of mine said that  
: as long as the wire size is close to what it says, than it would  
: be fine.

Ya, close enough. you can get enameled wire at Radio Shack there on Cushman street. More importantly you should check that the toriod is made of the proper material, iron powder or ferrite. Make sure you don't saturate the core. The core materials are highly frequency dependant. Make sure your wire is large enough for the current you want to use.

: Anyway, thanks AGAIN!!!!!!

: -----

: FSRLA@AURORA.ALASKA.EDU

: Roger Asbury

: -----

hope I have been of some help, Ken Brune WL7IR EX UAF student..

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Date: Mon, 14 Feb 1994 14:46:20 GMT

From: swrinde!emory!wa4mei.ping.com!ke4zv!gary@network.ucsd.edu

Subject: A few more (different) questions!

To: ham-homebrew@ucsd.edu

In article <1994Feb12.215920.1@aurora.alaska.edu> fsrla@aurora.alaska.edu writes:

>Yep, another post.....but this one is of

>a different nature, though it is MORE

>questions.....sigh.....

>

>1. What exactly is a varactor diode??? What

>does it do? Where do I go about purchasing them?

>I can't find any in the catalogs I have.

A varactor diode is a specially characterized semiconductor junction which, when reverse biased, has a known capacitance versus voltage response. All reverse biased semiconductor junctions have a variable capacitance in response to variable reverse voltage, but the value of the capacitance can vary from device to device. Varactors are made to have specific characteristics. Note that this means that you can often use regular rectifier diodes as varactors if you aren't concerned with a particular characteristic. Motorola makes an extensive line of MVxxxx varactor diodes. They're available from most Motorola distributors, and mail order places like Digikey carry a few different varactors.

>2. Are enameled wire and insulated wire the same thing?

Enamel is a way of insulating wires. It's basically paint. Other methods of insulation use plastic, rubber, or paper wrappings. Enameled wire is used primarily for winding coils because the paint is much thinner than the other types of insulation so you can get more turns of wire per inch.

>3. In relation to number 2 up there....when wireing your  
>own torioids, is wire size, and insulation incredibly important?  
>It seems like they would be, but a friend of mine said that  
>as long as the wire size is close to what it says, than it would  
>be fine.

In most cases, the insulation type and wire size are not extremely critical. In some cases they are. If you're filling a toroid with wire, the enamel insulation allows you to get more turns on the core for a given wire size. Wire size is important only for it's current carrying ability. You have to use wire that's heavy enough to carry the design current without excessive  $I^2R$  losses in the wire. Much more important is the core material. Different core mixes are required for different frequency ranges.

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

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Date: Mon, 14 Feb 94 19:10:07 GMT  
From: galileo.cc.rochester.edu!news@cs.rochester.edu  
Subject: Antenna help..

To: ham-homebrew@ucsd.edu

In <3caoHc1w165w@p-cove.UUCP> wolfman@p-cove.UUCP writes:

> I want to attempt to build my own 2m vertical.. I have never built one  
> before, so I would like any suggestions ideas, plans, or design ideas  
> that any of you would have. I would like one that has a high gain if it's  
> possible.

If you are willing to sacrifice gain, as a first antenna I would suggest a quarter-wave ground-plane. I used brass hobby tubing and rods for the elements because you can get them to telescope into each other to make tuning a breeze. The Ground radials aren't really critical, just cut them to about the right length and solder them to the flange of an SO-239 or a BNC-female chassis connector (much harder). Bend them down at about a 45-degree angle. Solder a 12-inch piece of tubing to the center post and telescope a 12-inch piece of rod into the open end of the tubing. With the antenna well away from nearby objects (preferably WAY up in the air), apply power through a good VHF SWR bridge and adjust the length of the vertical section to minimize SWR at your desired center frequency. Then fiddle with the angle of the radials. Keep repeating these steps until you are satisfied that you can't go any lower. Then solder the joint between the tubing and the rod and cover the solder with some heat shrink tubing.

For better mechanical strength, get some PC-7 paste epoxy (or your favorite equivalent) and build a cone of the stuff between the flange and the vertical element. ALLOW THIS TO FULLY CURE BEFORE YOU TUNE THE ANTENNA!!!!!!

> I would also like to know if it's possible to use a vertical antenna for  
> making contacts with the Mir space station, the shuttle, or other sats  
> that use fm/packet..

I've heard of it being done, though I've never done it myself.

> 73 de Aaron  
> KB8PFZ

-Bill VanRemmen,KA2WFJ  
billy@urhep.pas.rochester.edu  
URHEP::billy

My opinions. No one else's. Definitely not the U of R's.

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"Experience should teach us to be most on our guard to protect liberty  
when the government's purposes are beneficent . . . the greatest  
dangers to liberty lurk in insidious encroachment by men of zeal, well  
meaning but without understanding."

Justice Louis Brandeis  
Olmstead vs. United States, United States Supreme Court, 1928

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Date: Tue, 15 Feb 1994 16:59:30 GMT  
From: agate!howland.reston.ans.net!europa.eng.gtefsd.com!emory!wa4mei.ping.com!  
ke4zv!gary@network.ucsd.edu  
Subject: Good substitute for 1N23 as noise source?  
To: ham-homebrew@ucsd.edu

In article <2jogqu\$71b@usenet.INS.CWRU.Edu> trier@odin.ins.cwru.edu (Stephen C. Trier) writes:

>I'm thinking about building the gated noise source in the 1993 ARRL  
>Handbook. It uses a 1N23 for noise, but I haven't seen that diode in  
>catalogs or at the local surplus dealer. (I don't even know whether  
>it's silicon or germanium.) What is a reasonable substitute for the  
>1N23? I assume I could use any old diode with a poor noise figure?

The 1N23 was a point contact diode used in radar receivers. Similar diodes for this purpose would be 1N21 and 1N21B, or their W or R suffixed equivalents, though the R types are reversed polarity packages so beware. Ordinary diodes can be pressed into service at low frequencies, but won't produce enough broadband noise at higher frequencies to be useful.

An alternative design can use a MRF901 in controlled breakdown mode as a noise source. This can be made to produce robust output up to the gigahertz range. Vacuum tube thermal diodes can also be used as noise sources with broad bandwidths, and regulated heater current can give you a calibrated noise source.

Gary

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Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary  
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary  
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary  
Lawrenceville, GA 30244 | |

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Date: 14 Feb 1994 18:44:46 GMT  
From: ucsnews!newshub.sdsu.edu!usc!math.ohio-state.edu!magnus.acs.ohio-state.edu!  
usenet.ins.cwru.edu!odin!trier@network.ucsd.edu  
Subject: Good substitute for 1N23 as noise source?  
To: ham-homebrew@ucsd.edu

I'm thinking about building the gated noise source in the 1993 ARRL

Handbook. It uses a 1N23 for noise, but I haven't seen that diode in catalogs or at the local surplus dealer. (I don't even know whether it's silicon or germanium.) What is a reasonable substitute for the 1N23? I assume I could use any old diode with a poor noise figure?

Stephen

--

Stephen Trier KB8PWA            Dave: [H]as anyone ever met a Zamboni driver?  
Other: trier@ins.cwru.edu      Mike: The next version of OS/2 will include a  
Home: sct@po.cwru.edu           Zamboni driver. Let's see Microsoft top that!  
                                 (dave@cs.arizona.edu & miked@vnet.ibm.com)

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Date: Mon, 14 Feb 1994 01:11:58 GMT  
From: nwnexus!jhgrud!eskimo!rjberry@uunet.uu.net  
Subject: Help: I need a Z8 compiler!  
To: ham-homebrew@ucsd.edu

ka7oei@uugate.wa7slg.ampr.ORG writes:

>Yes, I need a Z8 compiler! (Not a Z80... I have several of those...)

>I already have one called "UASM" by Custom Computer Consultants (circa 4/86)  
>but it is non-standard and buggy...

UASM is an assembler. Compilers (for c language) are available from  
2500 AD and Bytecraft. Both are commercial products.

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ray berry kb7ht rjberry@eskimo.com ray@connected.com 73407.3152@compuserve.com

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Date: 15 Feb 1994 09:35:50 -0600  
From: newshub.nosc.mil!ihnp4.ucsd.edu!sdd.hp.com!sgiblab!swrinde!cs.utexas.edu!  
howland.reston.ans.net!torn!nott!bnrgate!corpgate!crchh327.bnr.ca!crchh620.bnr.ca!  
not-for-mail@network.ucsd.edu  
Subject: Pkt satellite receiver card for PC?  
To: ham-homebrew@ucsd.edu

[Q 1]:

I would like to know if there is an ISA-bus card which acts as  
a satellite receiver that I can plug into my PC. My "project"  
involves a satellite dish with coax cable receiving a packet RF  
transmission which I would like to run into my PC for decoding.  
The data would then be displayed under Windows3.1/NT/whatever.

[Q 2]:

What are Phil Karn's KA9q C functions?

If my questions don't make sense it's because I'm new to this  
and don't know much about packet radio.

Thanks

Allen Willson | BNR claims no responsibility  
allenw@bnr.ca | for my rambling.  
Bell-Northern Research, Ltd. |

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Date: 15 Feb 1994 12:22:41 -0600  
From: agate!howland.reston.ans.net!europa.eng.gtefsd.com!emory!news-  
feed-1.peachnet.edu!umn.edu!email.sp.paramax.com!not-for-mail@network.ucsd.edu  
Subject: Question about Super Dual-Band J-Pole  
To: ham-homebrew@ucsd.edu

David Johnson (djohnson@acpub.duke.edu) wrote:  
: I built the antenna from last Apr 73, and it seems to  
: work well on 2m, but it didn't do as well as an HT with  
: a whip ant on 440. What's up?

The radiating element on 440 is 3/4 wavelength long which  
results in a very high angle of radiation. If you tilt  
the jpole over so it is about 30 degrees above horizontal  
you should see gain on 440.

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Date: 14 Feb 1994 14:31:48 -0000  
From: agate!howland.reston.ans.net!pipex!warwick!kinguni!kinguni!not-for-  
mail@ames.arpa  
Subject: Usenet MC  
To: ham-homebrew@ucsd.edu

Oh, tricky one. I think I'll have to stump for  
sci.geo.fluids  
Let's see someone get out of that.

To all you RADIO hams: CQ? CQ!

Giles...

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Date: 16 Feb 94 08:42:44 GMT  
From: news-mail-gateway@ucsd.edu  
Subject: What test equipment do you use?  
To: ham-homebrew@ucsd.edu

It just occurred to me that I could finally get an answer to a question I've wondered about for a long time, namely:

As homebrewers, what test equipment do you use in getting your projects working? Are you using 'scopes, freq. counters, signal generators, sweep generators, GDO's, spectrum analysers? Any other obvious things I've forgotten at 1AM? Comments?

If I get enough responses I'll tabulate them and post them.

Thanks,

Mike, KK6GM

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End of Ham-Homebrew Digest V94 #31  
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